

A review of the Mutillidae (Hymenoptera) of Azerbaijan

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Abstract

Fifty-eight species in 19 genera are recorded from Azerbaijan. A new synonymy is proposed for *Mutilla sinuata* Olivier, 1811 (= *M. binotata* Radoszkowski, 1879, **syn. nov.**; *M. araratica* Radoszkowski, 1890, **syn. nov.**) and *Smicromyrme atrithorax* (André, 1902) (= *S. kurdus* Skorikov, 1935, **syn. nov.**). The lectotypes of seven species: *Agama caucasica* Radoszkowski, 1885, ♂; *Ephutomma radoszkowskii* Skorikov, 1935, ♂; *Mutilla armeniaca* Kolenati, 1846, ♀; *M. elongata* Radoszkowski, 1885, ♂; *M. binotata* Radoszkowski 1879, ♀; *M. araratica* Radoszkowski 1890, ♀; and *M. villosa* Klug 1829, ♀ are designated. Fourteen species are recorded for the first time from Azerbaijan: *Dasylabris (Inbaltilla) regalis* (Fabricius, 1793); *D. (I.) popovi* Skorikov, 1935; *D. (I.) shelkovnikovi* Lelej, 1985; *Dentilla erronea* (André, 1900); *Myrmilla (M.) calva* (Villers, 1789); *M. (Pseudomutilla) glabrata* (Fabricius, 1775); *M. (P.) vutshetitschi* Skorikov, 1927; *Physetopoda daghestanica* (Radoszkowski, 1885); *Pseudophotopsis armeniaca* (Skorikov, 1935); *Smicromyrme (Astomyrme) ausonius* Invrea 1950; *S. (Eremotilla) novaki* Invrea, 1954; *S. (Smicromyrme) ruficollis ruficollis* (Fabricius, 1793); *S. (S.) rufipes* (Fabricius, 1787); and *S. (S.) tristis* Lelej, 1984. Four species are excluded from the list of Azerbaijan fauna. An updated key to three Palaearctic species of *Macromyrme* Lelej, 1984 is given and new combination and resurrected status are proposed for *Macromyrme villosa* (Klug, 1829). A cluster analysis of faunal similarities among Azerbaijan, Armenia, Georgia, Turkey and three regions of Russia (Crimea, North Caucasus, south of European part) for Mutillidae produce two major clusters (index similarity 0.4): Azerbaijan, Armenia, Turkey and Georgia (bootstrap probability 45 %), and three regions of Russia (bootstrap probability 87 %). This demonstrates the important boundary between two large biogeographical subregions of Palaearctic: Mediterranean and Euro-Siberian. The Azerbaijan fauna, especially Nakhchivan Autonomous Republic, is most closely related with the Armenian fauna.

Key words: Caucasus, Azerbaijan, Nakhchivan Autonomous Republic, Hymenoptera, Mutillidae, fauna, new records, synonymy

Introduction

The Caucasus region includes six countries: Azerbaijan, Armenia, Georgia, Iran, Russia (North Caucasus and south of European part), and Turkey (Fig. 1). The Greater Caucasus Mountain Range forms a main barrier between the northern and southern parts of the region. Azerbaijan lies within four ecoregions: Caspian Hyrcanian mixed forests, Caucasus mixed forests, Eastern Anatolian montane steppe, and Azerbaijan shrub desert and steppe (Olson *et al.* 2001). The present paper is a part of the ongoing research of wasps of the territory of Azerbaijan (Fateryga *et al.* 2019, 2021; Mokrousov *et al.* 2019; Maharramov *et al.* 2020). Azerbaijan has long been known to possess a potentially rich mutillid fauna. However, there is no modern comprehensive work that summarizes all information about the velvet ants mentioned in the literature. The present work has been assembled to provide a revised list of the mutillid species found in Azerbaijan, to provide critical assessment of previous literature records, and to analyze the composition of mutillid fauna of Azerbaijan and its similarity with neighbouring countries.

Mutillidae inhabit mostly dry, semidesert and sandy areas. Such arid places are frequently seen in the territory of Azerbaijan. Five species and infraspecies taxa have been described from Azerbaijan (Kolenati 1846; André 1902a; Skorikov 1935; Lelej 1985), four of them are valid.

The Palaearctic Mutillidae were catalogized by Lelej (2002) where 44 species in 19 genera are listed from Azerbaijan. There is one specific paper on the Mutillidae of Azerbaijan fauna (Aliev & Lelej 1999) where 31 species were recorded based on examined material.

In this paper we enumerate 58 species in 19 genera, including 14 species newly recorded from Azerbaijan. Four species are excluded from the Azerbaijan fauna. The mutillid fauna of neighbouring countries and regions is studied rather well: Turkey—65 species (Lelej & Yildirim 2009), Armenia—41, Georgia—23 (Lelej 1985), Iran—77 (Lelej *et al.* 2008), and three regions of Russia: Crimea—38, North Caucasus—34, south of European part—33 (Lelej 2017). We analyzed the faunal similarity between Azerbaijan and these countries and related regions of Russia.



FIGURE 1. Geopolitical map of the Caucasus region. 1—Krasnodar Territory, 2—Adygea Republic, 3—Karachaevo-Cherkesk Republic, 4—Stavropol Territory, 5—Kabardino-Balkarskaya Republic, 6—Severnaya Ossetia Republic, 7—Ingushetia Republic, 8—Chechenskaya Republic, 9—Dagestan Republic (from: Kuhlmann & Proshchalykin 2016)

Materials and methods

Acronyms for collections from which specimens were borrowed or are deposited are as follows: **IBSS**—Federal Scientific Center of the East Asia Terrestrial Biodiversity (formerly Institute of Biology and Soil Science), Vladivostok,

Russia; **IRIPP**—Iranian Research Institute of Plant Protection, Tehran, Iran; **MNHU**—Museum für Naturkunde an der Humboldt-Universität, Berlin, Germany; **NHMW**—Natural History Museum, Vienna, Austria; **ZIN**—Zoological Institute, St. Petersburg, Russia. Abbreviations in the text for the collectors: HA—H. Aliev, MM—M. Maharramov, MP—M. Proshchalykin.

This paper is based on the material collected previously by M. Proshchalykin, H. Aliev, M. Maharramov and other entomologists. This material is deposited in the Institute of Zoology of National Academy of Sciences of Azerbaijan, Baku, Azerbaijan; Institute of Bioresources of Nakhchivan Branch of National Academy of Sciences of Azerbaijan, Nakhchivan, Azerbaijan; and in IBSS. All relevant material has been examined and re-identified by ASL. For the identification of this material, different keys (Lelej 1985, 2002) were used. Additional material from Azerbaijan in IBSS, comparative reference material, and types in IBSS, ZIN were also studied. The distribution data follows Pagliano *et al.* (2020) and higher classification follows Brothers & Lelej (2017). The citations of references and type material are given when they originate from Azerbaijan.

Faunal similarities between Azerbaijan and neighbouring countries, and some Russian regions were evaluated, without regard to differences in country area by using Sorensen's coefficient of similarity (see Legendre & Legendre 1998). The similarity matrix resulting from pair-wise calculations was then subjected to unweighted arithmetic average clustering (UPGMA; PAST program, version 1.57, Hammer *et al.* 2006).

Subfamily Myrmosinae

Tribe Myrmosini Fox

1. Genus *Krombeinella* Pate, 1947

Type species: *Hylaeus thoracicus* Fabricius, 1793, ♂, by original designation.

Eighteen species of this genus occur in the Palaearctic Region, mainly in the Mediterranean (Pagliano *et al.* 2020) and one species in Oriental Region (Williams *et al.* 2019). Only one species of this genus has been reported from Azerbaijan.

Krombeinella wolffi (Invrea, 1963)

Krombeinella wolffi: Lelej 1985: 63, ♂, ♀ (Azerbaijan).

Material examined. Azerbaijan: Yelizabetpolskiy Uyezd [Ganja Uyezd], 31.V–7.VI.1909, collector unknown, 1♂ [ZIN]; Shamakhi Rayon, Chukhuryurd, 29–31.VIII.1928, O.N. Bocharnikov, 2♂ [ZIN].

Distribution. Azerbaijan, Bulgaria, Georgia, Russia (Crimea), Serbia, Turkey, Ukraine.

2. Genus *Paramyrmosa* Saussure, 1880

Type species: *Myrmosa* (*Paramyrmosa*) *radoszkowskyi* Saussure, 1880, ♂, by monotypy.

Eight species of this genus occur in the Palaearctic Region (Pagliano *et al.* 2020). One species of this genus is distributed in Azerbaijan.

Paramyrmosa radoszkowskyi (Saussure, 1880)

Paramyrmosa radoszkowskyi: Lelej 1985: 65, ♂, ♀ (Azerbaijan).

Material examined. Azerbaijan: Kungut between Nukha [currently Shaki] and Vartashen [currently Oghuz],

5.VI.1904, K.A. Satunin, 1♂ [ZIN]; Pereleshkul, 27.V.1961, D.V. Panfilov, 1♀ [ZIN]; Leder, Reitter, [these specimens collected in Nakhchivan near Ordubad—see, Reitter 1890, 1905], 4♂ [ZIN].

Distribution. Azerbaijan, Armenia, Georgia, Turkey.

Subfamily Pseudophotopsidinae

3. Genus *Pseudophotopsis* André, 1896

Type species: *Agama komarovii* Radoszkowski, 1885, ♂, by subsequent designation of Ashmead 1903: 305 (misspelled as *Kamarovi*).

Twenty-five species of *Pseudophotopsis* are known from arid areas of the Palaearctic; a few penetrate to the Afrotropical and Oriental regions (Pagliano *et al.* 2020). They are mainly nocturnal. Three species of this genus are distributed in Azerbaijan. One of them is recorded from this country for the first time.

Pseudophotopsis armeniaca (Skorikov, 1935)

Ephutomma armeniaca Skorikov, 1935: 322, 324, ♀, lectotype (designated by Lelej 1980: 640), ♀, “Armenia, Erevan, 26.V.1924, [A.B.] Shelkovnikov” [ZIN], examined.

Pseudophotopsis armeniaca: Lelej 1980: 640, ♂, ♀.

Material examined. Azerbaijan: Nakhchivan, Shakhbuz, 39°23'N, 45°32'E, 1160 m, 30.VII.2018, MP, HA, MM, 1♀ [IBSS].

Distribution. Azerbaijan (new record), Armenia, Cyprus.

Pseudophotopsis caucasica (Radoszkowski, 1885)

Fig. 2

Agama caucasica Radoszkowski, 1885: 37, fig. 56, ♂, lectotype (**designated here**), ♂, “60 / CAUCAS[us] / NLOKOS[Mlokošewitz] / *caucasica* [handwritten] / Type / Coll. Radosz[owski] / Berlin / Lectotype *Agama caucasica* Radoszkowski 1885, B. Petersen des. 1989” [MNHU], examined.

Pseudophotopsis caucasica: Lelej 1980: 642, ♂, ♀; Pagliano *et al.* 2020: 20.

Material examined. Azerbaijan: Gobustan, 5 km ZW Jangi, 21.VII.2006, HA, 1♂; Apshron, Kizil-Dash, 28.VIII.2002, HA, 1♀.

Distribution. Azerbaijan, Afghanistan, Armenia, Cyprus, Georgia, Iran, Israel.

Note. Børge Petersen (unpublished) labelled the specimen in MNHU with Radoszkowski's “Type” label as the lectotype. Since no validly published lectotype designation has yet been made, we hereby designate the specimen so labelled by Petersen as the lectotype.

Pseudophotopsis schachruda (Skorikov, 1935)

Ephutomma schachruda Skorikov, 1935: 323, ♀ (lectotype (designated by Lelej 1980: 642), ♀, “Shachrud, S[evernaya] Persia, 21.V.1914, Kirichenko” (North Iran) [ZIN], examined). Junior subjective synonym of *Agama caucasica* Radoszkowski, 1885 according to Lelej 1980: 642. Resurrected status as *Pseudophotopsis schachruda* according to Lelej & Yildirim 2009: 8.

Ephutomma schachruda var. *robusta* Skorikov, 1935: 324, ♀, (lectotype (designated by Lelej 1980: 642), ♀, “Caucasus, Arax-esthal, Leder, Reitter” [Nakhchivan, near Ordubad—Reitter 1890, 1905] [ZIN], examined). Junior subjective synonym of *Pseudophotopsis schachruda* according to Lelej & Yildirim 2009: 8.

Material examined. Paralectotypes of *Ephutomma schachruda* var. *robusta*: Azerbaijan, Mugan steppe, VIII.1899,

M.D. Ruzsky, 1♀; Javad Uyezd, 4.VI.1900, M.D. Ruzsky, 2♀; Semenovka, 22.V.1913, Shreiner, 1♀; Mugan, 1♀; Mugan steppe, Alpaut, 12–14.VII.1910, K.A. Satunin, 3♀; former Ungut-Mugan area, Giaurarkh, 19.VI.1927, O.N. Bocharnikov, 1♀; same place, 4.VI.1927, Lyubarsky, 1♀ [ZIN].

Distribution. Azerbaijan, Armenia, Cyprus, Iran, Israel, Jordan, Turkey, Turkmenistan.

Subfamily Dasyabrinae

Tribe Dasyabrini

4. Genus *Dasylabris* Radoszkowski, 1885

Type species: *Mutilla arenaria* Fabricius, 1787, ♀, by subsequent designation of Ashmead 1904: 7 (junior subjective synonym of *M. atrata* Linnaeus, 1767, ♂).

This genus is widely spread in the Old World (63 species in the Palaearctic, 105 in the Afrotropical, and five in the Oriental regions) (Pagliano *et al.* 2020). Currently eight species of this genus are known from Azerbaijan, three of these species are newly recorded from this country. The species *D. paupertina* Skorikov, 1935 and *D. gobicola* Skorikov, 1935 are excluded from the list of Azerbaijan fauna as wrongly recorded.

Dasylabris (Craspedopyga) manderstiernii manderstiernii (Radoszkowski, 1865)

Dasylabris (Craspedopyga) manderstiernii manderstiernii: Lelej 1976: 196, ♂, ♀; Aliev & Lelej 1999: 48, ♀ (Azerbaijan).

Material examined. Azerbaijan: Apshron, Kizil-Dash, 28.VIII.2002, HA, 1♂, 1♀; NW Baku, Varafta Mts., W Kilyazi, 250 m, 40°50'N, 49°10'E, 25.VI.1996, M. Hauser, 1♂ [IBSS]; Gobustan, 5 km ZW Jangi, 21.VII.2006, HA, 3♀; Apshron, under stones, 16.VII.1999, E. Guseinov, 1♀; Apshron, Dubendy, 25.V.1999, E. Guseinov, 1♀; Shuvelyan, 15.IX.2002, HA, 1♀; Salyan, Bendovan, 29.V.2000, HA, 1♀; Baku, 17–19.IV.2001, Yu. Marusik, 5♀; same place, 22–24.VII.1988, S. Storozhenko, 1♀; Khachmaz District, mouth of Qusarçay, 22.VII.1985, V. Gorbato-vskij, 1♀; Julfa, Daridagh, 38°59'N, 45°40'E, 900 m, 17.VI.2019, MP, HA, MM, 2♂; Julfa, 5 km N Dize, 39°03'N, 45°45'E, 965 m, 20.VI.2019, MP, HA, MM, 3♂; Shakhbuz, Salasuz, 39°20'N, 45°45'E, 1125 m, 23.VII.2018, MP, HA, MM, 1♂; Babek, Shikhmahmud, 39°16'N, 45°25'E, 945 m, 14.VI.2016, MM, 1♂; Kangarli, Chalkhangala, 39°25'N, 45°13'E, 1445 m, 17.VI.2020, MM, 1♂; Ordubad, Aza, 38°55'N, 45°50'E, 752 m, 20.IV.2017, MM, 1♂; Julfa, Dize, 26.IV.2012, HA, 4♀; Chalkhangala, 2.V.2012, HA, 1♀; Julfa, Gyulistan, 25.IV.2012, HA, 1♀; same place, 2.IX.2012, HA, 1♀; Julfa, 2.V.2012, HA, 1♀.

Distribution. Azerbaijan, Armenia, Bulgaria, Georgia, Greece, Iran (north), Lebanon, Russia (Crimea, North Caucasus), Syria, Turkey, Turkmenistan.

Dasylabris (Dasylabris) maura armeniaca (Kolenati, 1846)

Fig. 3

Mutilla armeniaca Kolenati, 1846: 123, ♀, lectotype (**designated here**), ♀, “Elisabethhop[ol], [Azerbaijan, Ganja] / Kolenati / *Mutilla armeniaca* Kolenati / *Mutilla armeniaca* det. Kolenati Type / *maura* var. *arenaria* F. det. Kohl / Lectotype *Mutilla armeniaca* Kol. Lelej design. 2011” [NHMW], examined.

Dasylabris (Dasylabris) atrata: Aliev & Lelej 1999: 48, ♀, ♂ (Azerbaijan).

Dasylabris (Dasylabris) maura armeniaca: Lelej 2002: 94 (Azerbaijan).

Material examined. Azerbaijan: Apshron, Kizil-Dash, 28.VIII.2002, HA, 1♂; Agdash, Turianchay, 5.X.1998, HA, 1♂; same place, 7.VIII.1994, HA, 1♀; Apshron, Dubendy, 15.IX.2002, HA, 1♂; Lerik, Gosmolyan, 24.IV.1992, V. Tikhonov, 1♀; Baku, Shubany, 5.VIII.2009, HA, 1♀; Turkan, 12.X.2003, HA, 1♀; Sangachal, 2.VI.2004, HA, 3♀; Salyan, Bendovan, 29.V.2000, HA, 1♀; Gobustan, 5 km ZW Jangi, 21.VII.2006, HA, 1♂; Talysh, Gosmolyan, 2000 m, 9.VI.1985, A. Sharkov, 1♀; Apshron, Zagulba, 16–26.V.1970, O. Kryzhanovskiy, 2♀; Baku, 22–24.VII.1988, S.

Storozhenko, 4♀; Shuvelyan, 7.VI.2003, HA, 1♀. Azerbaijan: Nakhchivan: Julfa, Daridagh, 38°59'N, 45°40'E, 900 m, 20.VI.2019, MP, HA, MM, 1♂; Babek, Gahab, 39°15'N, 45°31'E, 1045 m, 12.VI.2019, MP, HA, MM, 9♂; Babek, Dize, 39°14'N, 45°32'E, 1023 m, 13.VI.2018, MM, 1♂; Julfa, Dize, 26.IV.2012, HA, 1♀; Julfa, Askhabu-Kaf, 1.V.2012, HA, 1♀; Julfa, 25–27.V.1974, M. Volkovich, 1♀; Ordubad, Bilav, 27.IV.2012, HA, 1♀.

Distribution. Azerbaijan, Armenia, Iran (north), Russia (North Caucasus), Turkmenistan (Kopet Dag Mts.).

Dasylabris (Dasylabris) mixta (André, 1902)

Dasylabris (Dasylabris) mixta: Lelej 1976: 195, ♀; 1985: 127, ♀, ♂ (Azerbaijan).

Material examined. Azerbaijan: Khirdalan, 28.V.1992, HA, 4♀; Apshron, Kizil-Dash, 28.VIII.2002, HA, 1♀; Gobustan, Beyuk-Dash Mt., 26.VII.2009, HA, 1♀; Gobustan, 15.IV.2001, Yu. Marusik, 1♀; Baku, Karadag, 24.IV.1982, P. Kazaryan, 1♀; 10 km NE Julfa, 17.VI.1985, A. Sharkov, 1♀; Ordubad, 29–30.V.1974, M. Volkovich, 1♀.

Distribution. Azerbaijan, Armenia, Iran (north), Turkmenistan (south-western).

Dasylabris (Inbaltilla) erronea Lelej, 1985

Dasylabris (Inbaltilla) medialis: Lelej 1976: 200, ♀ (Azerbaijan, Armenia).

Dasylabris (Inbaltilla) paupertina: Lelej 1985: 139, ♂, part. (Azerbaijan, Armenia)

Dasylabris (Inbaltilla) erronea Lelej 1985: 140, ♀ (Azerbaijan).

Dasylabris (Baltilla) gobicola: Aliev & Lelej 1999: 50, ♀ (Azerbaijan).

Dasylabris (Inbaltilla) shelkovnikovi: Aliev & Lelej 1999: 50, ♂ (Azerbaijan).

Material examined. Azerbaijan: Apshron, Kizil-Dash, 28.VIII.2002, HA, 1♀; S Baku, 20 km N Salyany, 50 m, 39°50'N, 49°17'E, 30.V.1996, M. Hauser, 1♂; Lerik Distr., Talysh Mts., Zuvant, Ghilidara, 27.VII.1976, HA, 2♂; Babek, Sirab, 39°18'N, 45°32'E, 1245 m, 7.VI.2018, MM, 1♂; same place, 1090 m, 2–6.VI.2019, MM, 5♂; same place, 1090 m, 10.VI.2019, MP, HA, MM, 5♂; Babek, Gahab, 39°15'N, 45°31'E, 1045 m, 12.VI.2019, MP, HA, MM, 2♂; Kangarli, Garabaglar, 39°23'N, 45°32'E, 1140 m, 14.VI.2019, MP, HA, MM, 1♂; Shakhbuz, 39°23'N, 45°32'E, 1160 m, 14.VI.2019, MP, HA, MM, 1♂; Shakhbuz, Zarnatun, 39°31'N, 45°46'E, 1550 m, 14.VI.2019, MP, HA, MM, 1♂; Julfa, Daridagh, 38°59'N, 45°40'E, 900 m, 17, 20.VI.2019, MP, HA, MM, 2♂.

Distribution. Azerbaijan, Armenia, Kazakhstan, Kyrgyzstan, Tajikistan, Uzbekistan.

Note. The male of this species was described (Aliev & Lelej 1999) under the name *D. (I.) shelkovnikovi*. There are two species of *Inbaltilla* in Azerbaijan with entirely black body color: *D. erronea* and *D. shelkovnikovi*. The females of these species differ by absence (in *D. erronea*) or presence (in *D. shelkovnikovi*) of a medial basal spot of white setae on metasomal tergum 2 and small medial spot of white setae on metasomal tergum 3. The males of these species differ in the shape of the hind coxa (mesal carina without apical acute denticle in *D. erronea* and with such denticle in *D. shelkovnikovi*) and by lacking medial spot of white setae on metasomal tergum 3 in *D. erronea* and by presence of such spot in *D. shelkovnikovi*.

Dasylabris (Inbaltilla) regalis (Fabricius, 1793)

Dasylabris (Inbaltilla) regalis: Lelej 1976: 196, ♀, ♂.

Material examined. Azerbaijan: Galaalti, 12.VII.2012, I. Kerimova, 2♀; Apshron, Dubendy, 25.V.1999, E. Gu-seinov, 3♀.

Distribution. Azerbaijan (new record), Austria, Bosnia and Herzegovina, Bulgaria, Croatia, Czech Republic, Hungary, Kazakhstan, North Macedonia, Russia (Crimea, North Caucasus, south and east of European part, Urals, Altai), Serbia, Slovakia, Ukraine.

***Dasylabris (Inbaltilla) popovi* Skorikov, 1935**

Dasylabris italica var. *popovi* Skorikov, 1935: 297, tab. 2, fig. 10, ♀.

Dasylabris (Inbaltilla) popovi: Lelej 1985: 258, ♀.

Material examined. Azerbaijan: Talysh, Zuvant, Gosmolyan, 1300 m, 38°40'N, 48°20'E, 12.VI.1996, M. Hauser, 1♀.

Distribution. Azerbaijan (new record), Armenia, Iran (north).

***Dasylabris (Inbaltilla) scutilla* Skorikov, 1935**

Dasylabris (Inbaltilla) scutilla Skorikov, 1935: 298, 301, tab. 2, fig. 12, ♀.

Dasylabris (Inbaltilla) scutilla: Lelej 1985: 137, ♀, ♂.

Material examined. Azerbaijan: Talysh, Zuvant, Gosmolyan, 1200 m, 8, 9.VI.1985, V. Tobias, 7♂ [ZIN]; same place, 1300 m, 38°40'N, 48°20'E, 11, 12.VI.1996, M. Hauser, 2♂; Apshron, Shuvelyan, 7.VI.2003, HA, 1♀; Apshron, Zagulba, 10–26.V.1970, O. Kryzhanovsky, 1♀; Babek, Shikhmahmud, 39°22'N, 45°35'E, 1313 m, 27.VI.2016, MM, 2♂; Babek, Nahajir, 39°14'N, 45°35'E, 1163 m, 13.VI.2018, MM, 1♂; Kangarli, Chalkhangala, 39°25'N, 45°13'E, 1445 m, 25.VI.2020, MM, 1♂; Shakhbuz, Zarnatun, 39°31'N, 45°46'E, 1550 m, 14, 18.VI.2019, MP, HA, MM, 6♂; Shakhbuz, Kulus, 39°21'N, 45°37'E, 1395 m, 19.VI.2019, MP, HA, MM, 3♂; Sharur, Akhura, 39°33'N, 45°13'E, 1640 m, 13.VI.2019, MP, HA, MM, 2♂; Babek, Goynuk, 39°18'N, 45°40'E, 1680 m, 12.VI.2019, MP, HA, MM, 1♂.

Distribution. Azerbaijan, Armenia, Georgia, Greece (Crete), Turkey.

***Dasylabris (Inbaltilla) shelkovnikovi* Lelej, 1985**

Dasylabris ornata armeniaca Skorikov, 1935: 298, ♀, nom. praeocc., non Kolenati, 1846.

Dasylabris (Inbaltilla) shelkovnikovi Lelej, 1985: 138, ♀. Replacement name.

Material examined. Azerbaijan: Julfa, Dize, 26.IV.2012, HA, 2♀; Julfa, Daridagh, 38°59'N, 45°40'E, 900 m, 17.VI.2019, MP, HA, MM, 5♂; same place, 20.VI.2019, MP, HA, MM, 2♂.

Distribution. Azerbaijan (new record), Armenia.

Subfamily Myrmillinae

5. Genus *Mymilla* Wesmael, 1851

Type species: *Mutilla distincta* Lepeletier de Saint-Fargeau, 1845, ♀, by subsequent designation of Ashmead 1903: 324 (junior subjective synonym of *Mutilla calva* Villers, 1789, ♀).

Forty-six *Myrmilla* species occur in the Palaearctic region, mainly in the Mediterranean, but only a few penetrate to the Afrotropical and Oriental Regions (Lelej 2007). Nine species of this genus are distributed in Azerbaijan, three of them are newly recorded from this country.

***Myrmilla (Eurygnathilla) emiliae* (Dalla Torre, 1897)**

Myrmilla (Eurygnathilla) emiliae: Lelej 1985: 110, ♀; Aliev & Lelej 1999: 44, ♀ (Azerbaijan).

Material examined. Azerbaijan: Talysh, Gosmolyan, 2000 m, 9.VI.1985, A. Sharkov, 1♀; Ordubad, Bilav, 27.IV.2012, HA, 2♀.

Distribution. Azerbaijan, Armenia, Iraq, Turkey, Turkmenistan.

***Myrmilla (Myrmilla) caucasica* (Kolenati, 1846)**

Myrmilla (Myrmilla) caucasica: Lelej 1985: 99, ♀, ♂; Aliev & Lelej 1999: 44, ♀ (Azerbaijan).

Material examined. Azerbaijan: Baku, Gobustan, 15.IV.2001, Yu. Marusik, 1♀; Kuba, Nyugedi, 16.VI.2012, I. Kerimova, 1♀; Kilyazi, Tarakend, 10.VI.2000, HA, 1♀; Kilyazi, Altiagach, 2.IX.1983, P. Kazaryan, 1♀; Lerik, Gilidara, 18.V.1983, P. Kazaryan, 1♀; Galaalti, 24.IV.1988, Davidyan, 1♀.

Distribution. Azerbaijan, Armenia, Bulgaria, Croatia, Cyprus, Georgia, Greece, Iran, North Macedonia, Romania, Russia (Crimea, North Caucasus, south of European part), Serbia, Turkey, Ukraine.

***Myrmilla (Myrmilla) etzchmiadzini* (Radoszkowski, 1885)**

Myrmilla (Myrmilla) etzchmiadzini: Aliev & Lelej 1999: 44, ♀ (Azerbaijan).

Myrmilla (Myrmilla) calva armeniaca Skorikov, 1927: 36, ♀, lectotype (designated by Lelej 1985: 99), Armenia, near Erevan, 25.VI.1924, A. Shelkovnikov [ZIN], examined. Junior subjective synonym of *M. etzchmiadzini* (Radoszkowski) according to Aliev & Lelej 1999: 44.

Material examined. Azerbaijan: Karabakh, Shusha, 1800 m, 12.VI.1933, Lukyanovich / *Myrmilla armeniaca* Skor., Lelej det. 1981 / *Myrmilla etzchmiadzini* (Rad.), B. Petersen det. 1988 / Compared by B. Petersen with lectotype of *Mutilla etzchmiadzini* Rad. /, 1♀; Apshron, Kizil-Dash, 28.VIII.2002, HA, 1♀; Apshron, under stones, 25.VIII.1994, E. Guseinov, 1♀.

Distribution. Azerbaijan, Armenia, Iran, Russia (North Caucasus).

***Myrmilla (Myrmilla) lezginica* (Radoszkowski, 1885)**

Myrmilla (Myrmilla) lezginica: Lelej 1985: 101, ♀, ♂; Aliev & Lelej 1999: 44, ♀ (Azerbaijan).

Material examined. Azerbaijan: Shakhbuz, 39°23'N, 45°32'E, 3.V.2012, HA, 1♀; Chalkhan-gala, 2.V.2012, HA, 1♀; Apshron, Zagulba, 10–26.V.1970, O. Kryzhanovskiy, 1♀.

Distribution. Azerbaijan, Bulgaria, Georgia, Greece, Iran, Israel, North Macedonia, Romania, Russia (Crimea, North Caucasus), Serbia, Turkey, Turkmenistan, Ukraine, Uzbekistan.

***Myrmilla (Myrmilla) calva* (Villers, 1789)**

Myrmilla (Myrmilla) calva: Lelej 1985: 94, 95, ♀, ♂.

Material examined. Azerbaijan: Nakhchivan, 4.VII.1982, Yu. Pesenko, 1♂.

Distribution. Azerbaijan (new record), Albania, Austria, Bosnia and Herzegovina, Bulgaria, Croatia, Czechia, Egypt, France, Germany, Greece, Hungary, Italy, Libya, North Macedonia, Morocco, Portugal, Romania, Serbia, Slovakia, Slovenia, Spain, Switzerland, Tunisia, Turkey.

***Myrmilla (Pseudomutilla) glabrata* (Fabricius, 1775)**

Myrmilla (Pseudomutilla) glabrata: Lelej 1985: 106, ♀, ♂.

Material examined. Caucasus, Araxesthal, Leder, Reitter [Azerbaijan, Nakhchivan Autonomous Republic near Ordubad—Reitter, 1890, 1905] / *cephalica* det E. André / *Myrmilla glabrata* (F.) Lelej det. /, 1♀.

Distribution. Azerbaijan (new record), Austria, Bulgaria, Greece, Hungary, Kazakhstan, North Macedonia, Romania, Russia (European part except north, Urals), Serbia, Syria, Turkey, Ukraine, Uzbekistan.

***Myrmilla (Pseudomutilla) meda* Skorikov, 1927**

Myrmilla (Pseudomutilla) meda: Lelej 1985: 108, ♀, ♂ (Azerbaijan); Aliev & Lelej 1999: 44, ♀ (Azerbaijan).

Material examined. Azerbaijan: Agdash, Turianchay, 7.VIII.1994, HA, 1♂.

Distribution. Azerbaijan, Iran (north), Russia (North Caucasus), Turkmenistan (south-west).

***Myrmilla (Pseudomutilla) skorikovi* Lelej, 1985**

Myrmilla (Pseudomutilla) skorikovi Lelej, 1985: 109, ♀. Replacement name for *Myrmilla meda caucasica* Skorikov, 1927, nom. praeocc., non Kolenati, 1846.

Material examined. Azerbaijan: Sheki, Kuduly, 31.VI.1928, O. Bocharnikov, 1♀; Quba, Qusary, 2.V.1928, O. Bocharnikov, 1♀.

Distribution. Azerbaijan, Georgia, Iran, Russia (North Caucasus, south of European part).

***Myrmilla (Pseudomutilla) vutshetitshi* Skorikov, 1927**

Myrmilla (Pseudomutilla) vutshetitshi: Lelej 1985: 107, ♀, ♂.

Material examined. Azerbaijan: Agdash, Turianchay, 9.V.1992, HA, 2♀.

Distribution. Azerbaijan (new record), Austria, Bulgaria, Georgia, Greece, Romania, Russia (Crimea, North Caucasus, south of European part), Syria, Turkey, Ukraine.

6. Genus *Platymyrmilla* André, 1900

Type species: *Mutilla quinquefasciata* Olivier, 1811, by monotypy.

This genus is monotypic and occurs in the East Mediterranean (Lelej 2002).

***Platymyrmilla quinquefasciata* (Olivier, 1811)**

Platymyrmilla quinquefasciata: Lelej 1985: 111, ♀, ♂; Aliev & Lelej 1999: 45, ♀, ♂ (Azerbaijan).

Material examined. Azerbaijan: Agdash, Turianchay, 10.V.1992, 8.VIII.1994, HA, 2♀; Talysh, Gosmolyan, 2000 m, 9.VI.1985, A. Sharkov, 1♀; Ordubad, Aghdara, 39°06'N, 45°54'E, 2000 m, 17.VI.2019, MP, HA, MM, 1♀.

Distribution. Azerbaijan, Armenia, Bulgaria, Croatia, France (Corsica), Georgia, Greece, Hungary, Iran, Iraq, Israel, Italy, North Macedonia, Romania, Ukraine (Izmail), Syria, Turkey.

Subfamily Mutillinae

Tribe Ctenotillini

7. Genus *Ctenotilla* Bischoff, 1920

Type species: *Mutilla pectinifera* André, 1893, ♀, by subsequent designation of Bischoff 1921: 585 (junior subjective synonym of *Mutilla caeca* Radoszkowski, 1879, ♂).

Three species are recognized in this genus: *C. caeca* (Radoszkowski, 1879), which is widespread in the Palaearctic; *C. porcella* (Turner, 1911) from India and Sri Lanka; and *C. guangdongensis* Lelej, 1992, which is known from China and Thailand.

Ctenotilla caeca (Radoszkowski, 1879)

Ctenotilla caeca: Lelej 1985: 167, ♀, ♂ (Azerbaijan); Aliev & Lelej 1999: 45, ♀ (Azerbaijan).

Material examined. Azerbaijan: Agdash, Turianchay, 6, 13.VIII.1994, HA, 2♀; Shikhmakhmud, 12.VI.2009, MM, 1♂, 1♀; Kangarli, Chalkhangala, 30.VI.2021, 39°25'N, 45°13'E, 1445 m, MM, 1♂; Kangarli, Garabaglar, 39°25'N, 45°13'E, 1270 m, 13.VI.2019, MP, HA, MM, 1♂; Shakhbuz, 39°23'N, 45°32'E, 1140 m, 22–23.VII.2018, MP, HA, MM, 1♂; Julfa, Daridagh, 38°59'N, 45°40'E, 900 m, 20.VI.2019, MP, HA, MM, 2♂.

Distribution. Azerbaijan, Armenia, Bulgaria, Russia (Crimea), Croatia, Greece, Iran, North Macedonia, Romania, Serbia, Syria, Turkey.

Tribe Smicromyrmini

8. Genus *Dentilla* Lelej in Lelej & Kabakov, 1980

Type species: *Mutilla erronea* André, 1902, ♂, by original designation.

Twenty-three species are recognized predominantly from Palaearctic Region, six Afrotropical species (two of them penetrate from the Palaearctic), and two Oriental species (Pagliano *et al.* 2020). Five species of this genus are distributed in Azerbaijan; one of them is newly recorded from Azerbaijan.

Dentilla caucasica Lelej, 1985

Dentilla caucasica Lelej, 1985: 193, ♀, holotype, Azerbaijan: Nakhchivan: Ordubad, 10.VI.1934, Kirshenblat [ZIN], examined.

Material examined. No additional material has been studied.

Distribution. Azerbaijan.

Dentilla curtiventris (André, 1901)

Dentilla cretica: Aliev & Lelej 1999: 46, ♀ (Azerbaijan).

Dentilla curtiventris: Lelej 2002: 51.

Material examined. Azerbaijan: Ordubad, 25.VI.2012, HA, 1♂; Julfa, Gazanchi, 39°13'N, 45°41'E, 1300 m, 26–27.VII.2018, MP, HA, MM, 1♂; Shakhbuz, Kulus, 39°21'N, 45°37'E, 1395 m, 19.VI.2019, MP, HA, MM, 2♂; Kangarli, Chalkhangala, 39°25'N, 45°13'E, 1445 m, 25.VI.2020, MM, 2♂; Shakhbuz, Kulus, 39°22'N, 45°36'E, 1360 m, 19.VI.2020, MM, 3♂.

Distribution. Azerbaijan, Albania, Algeria, Armenia, Bulgaria, Egypt, Greece, Italy, North Macedonia, Serbia, Syria, Turkey.

Dentilla erronea (André, 1900)

Dentilla erronea: Lelej 1985: 192, ♂, ♀; Özbek *et al.* 1999: 18.

Material examined. Azerbaijan: Kangarli, Chalkhangala, 39°25'N, 45°13'E, 1445 m, 17.VI.2020, MM, 1♂.

Distribution. Azerbaijan (new record), Albania, Algeria, Bulgaria, Greece, Italy, Turkey.

Dentilla persica (Sichel & Radoszkowski, 1870)

Dentilla persica: Lelej 1985: 193, ♂, ♀ (Azerbaijan); Aliev & Lelej 1999: 46, ♀, ♂ (Azerbaijan).

Material examined. Azerbaijan: Talysh Mts., Lerik, Pirasora, 6.VII.2012, Sh. Magerramova, 1♂; Apshron, Inzhirnaya, 20.VII.1991, HA, 1♀; 30 km E Baku, Mardakan, 22.VI.1985, V. Gorbatsvskij, 1♀, 1♂; Apshron, Inzhirnaya, 24.VIII.1985, HA, 1♀; Kangarli, Chalkhangala, 39°25'N, 45°13'E, 1445 m, 30.VI.2021, MM, 1♂; Shakhbuz, 10.VII.1949, A. Bogachev, 1♀.

Distribution. Azerbaijan, Armenia, Greece, Iran, Israel, Turkey.

Dentilla ursina (Nagy, 1972)

Dentilla ursina: Lelej 1985: 191, ♀ (Azerbaijan).

Material examined. No specimens have been examined.

Distribution. Azerbaijan, Turkey.

9. Genus *Nemka* Lelej, 1985

Type species: *Mutilla viduata* Pallas, 1773, ♂, by original designation.

Eighteen species are recognized mainly from the Oriental Region, four species and five subspecies of this genus occur in the Palaearctic Region (Pagliano *et al.* 2020). One widespread Mediterranean species with two subspecies is distributed in Azerbaijan.

Nemka viduata viduata (Pallas, 1773)

Nemka viduata viduata: Aliev & Lelej 1999: 48, ♀, ♂ (Azerbaijan).

Material examined. Azerbaijan: Baku, Inzhirnaya, 22–24.VII.1988, S. Storozhenko, 1♀; Kusarchai mouth, 22.VII.1988, V. Gorbatsvskij, 2♀.

Distribution. Azerbaijan, Albania, Armenia, Austria, Bosnia and Herzegovina, Bulgaria, China (Xingjiang), Czechia, France, Georgia, Germany, Greece, Hungary, Italy, Kazakhstan, North Macedonia, Malta, Mongolia, Morocco, Romania, Russia (European part, Urals, Western Siberia), Serbia, Slovakia, Slovenia, Spain, Syria, Turkey, Ukraine.

Nemka viduata bartholomaei (Radoszkowski, 1865)

Nemka viduata luctuosa: Aliev & Lelej 1999: 48, ♀, ♂ (Azerbaijan).

Nemka viduata bartholomaei: Lelej 2002: 56 (Azerbaijan).

Material examined. Azerbaijan: Apshron, Inzhirnaya, 20.VI.1993, HA, 1♂; Agdash, Turianchay, 6.VIII.1994, HA, 1♂; Apshron, Kizil-Dash, 28.VIII.2002, HA, 1♀; Babek, Sirab, 39°18'N, 45°32'E, 1245 m, 22.VI.2012, HA, 1♂; Shakhbuz, Zarnatun, 39°31'N, 45°46'E, 1550 m, 14, 18.VI.2019, MP, HA, MM, 2♂; Babek, Sirab, 39°18'N, 45°32'E, 1250 m, 19, 21.VI.2019, MP, HA, MM, 2♂; Julfa, Daridagh, 38°59'N, 45°40'E, 900 m, 17, 20.VI.2019, MP, HA, MM, 2♂; 9 km N Julfa, 39°02'N, 45°36'E, 900 m, 16.VI.2019, MP, HA, MM, 1♂; Shakhbuz, 39°22'N, 45°35'E, 1313 m, 27.VI–14.VII.2016, MM, 6♂; same place, 30.VII.2018, MP, HA, MM, 1♀; Shakhbuz, Salasuz, 39°20'N, 45°45'E, 1125 m, 23.VII.2018, MP, HA, MM, 1♂, 1♀; Shakhbuz, Kulus, 39°22'N, 45°36'E, 1360 m, 19.VI.2020, MM, 1♀; Julfa, Gulistan, 38°58'N, 45°36'E, 740 m, 26.VII.2018, MP, HA, MM, 1♂.

Distribution. Azerbaijan, Armenia, China (Xinjiang), Georgia, Iran (north), Kazakhstan (south), Kyrgyzstan, Turkey, Turkmenistan, Uzbekistan.

10. Genus *Physetopoda* Schuster, 1949

Type species: *Physetopoda insularis* Schuster, 1949, ♂, by original designation (junior subjective synonym of *Mutilla rubrocincta* Lucas, 1849, ♂).

Forty-seven species are known, mostly from the Palaearctic, though many of the Afrotropica members of *Smicromyrme* Thomson, 1870 will likely be transferred to *Physetopoda* in the future. Five species are known from the Oriental Region (Pagliano *et al.* 2020). Four species of this genus are distributed in Azerbaijan, one of them is newly recorded from Azerbaijan.

Physetopoda asiatica (Lelej, 1984)

Physetopoda asiatica: Lelej 1985: 206, ♀, ♂ (Azerbaijan).

Material examined. Azerbaijan: Elisavetpol [Ganja], 5–11.IV.1909, Babadzhanidi, 2♀ [ZIN]; Talysh, Lerik, 14.V.1909, Kirichenko, 1♀ [ZIN]; Kalakhana, 27.V.1959, V. Richter, 1♀ [ZIN].

Distribution. Azerbaijan, Armenia, Iran (north), Kazakhstan, Kyrgyzstan, Uzbekistan.

Physetopoda daghestanica (Radoszkowski, 1885)

Physetopoda daghestanica: Lelej 2002: 58, ♂.

Material examined. Azerbaijan: Shakhbuz, Kecheli, 22.VII.2021, MM, 1♂; Ordubad, Aghdara, 39°06'N, 45°54'E, 2000 m, 28.VII.2016, MM, 1♂; same place, 28.VII.2018, MP, HA, MM, 7♂; Sharur, Akhura, 39°33'N, 45°13'E, 1640 m, 13.VI.2019, MP, HA, MM, 1♂.

Distribution. Azerbaijan (new record), Turkey, Kazakhstan, Greece, Serbia, Montenegro, North Macedonia, Croatia, Germany, Czech Republic, Slovakia, Austria, Switzerland, Hungary, Romania, Ukraine, Russia (Crimea, south of European part, Altai), Italy, France.

Physetopoda portschinskii (Radoszkowski, 1888)

Physetopoda portschinskii: Lelej 1985: 207, ♂ (Azerbaijan).

Material examined. Azerbaijan: Julfa, Gulistan, 38°58'N, 45°36'E, 740 m, 26.VII.2018, MP, HA, MM, 1♂.

Distribution. Azerbaijan, Armenia, Kazakhstan, Russia (North Caucasus, south of European part), Turkmenistan (south-west).

Physetopoda similis (Lelej, 1984)

Physetopoda similis: Lelej 1985: 209, ♂ (Azerbaijan); Aliev & Lelej 1999: 47, ♂ (Azerbaijan).

Material examined. Azerbaijan: Kangarli, Chalkhangala, 39°25'N, 45°13'E, 1445 m, 25.VI.2020, MM, 11♂; Shakhbuz, Zarnatun, 39°31'N, 45°46'E, 1550 m, 14, 24.VII.2018, MP, HA, MM, 1♂; Shakhbuz, Salasuz, 39°20'N, 45°45'E, 1125 m, 23.VII.2018, MP, HA, MM, 1♂; Shakhbuz, Kolani, 39°28'N, 45°43'E, 1300 m, 24.VII.2018, MP, HA, MM, 1♂.

Distribution. Azerbaijan, Armenia, Russia (Crimea), Turkey.

11. Genus *Skorikovia* Ovtchinnikov, 2002

Type species: *Mutilla elongata* Radoszkowski, 1885, ♂, by original designation.

Six species of this genus occur in the Palearctic Region. The females are known only for the type species. Three species of this genus are distributed in Azerbaijan.

Skorikovia elongata (Radoszkowski, 1885)

Fig. 4

Mutilla elongata Radoszkowski, 1885: 17, fig. 13, ♂, lectotype (**designated here**), ♂, “Caucasus / MLOCK[osewitz] / 2 / *elongata* [handwritten] / Type / Coll. Radosz[owski] / Zool. Muz. Berlin / Paralectotype *Mutilla elongata* Radoszkowski 1885, B. Petersen des. 1988 / *Smicromyrme elongata* (Rad.), B. Petersen det. 1988 / *elongata* [handwritten] / Lectotypus *Mutilla elongata* Rad. Lelej design. 2011 / *Skorikovia elongata* (Rad.) Lelej det. 2011” [MNHU], examined.

Skorikovia elongata: Lelej 2002: 64 (Azerbaijan).

Material examined. Azerbaijan, Elisavetpol [Ganja], without additional data, 2♂ [ZIN]; Azerbaijan: Disar [Bashkend] near Ordubad, 19–23.VII.1933, D. Znoiko, 4♂ [ZIN].

Distribution. Azerbaijan, Afghanistan, Iran, Kazakhstan, Kyrgyzstan, Russia (European part), Turkmenistan, Uzbekistan.

Note. Most of the specimens collected by L.F. Mlokosiewitz in 1867–1889 in Georgia, Dagestan, and Azerbaijan were labeled [probably by O. Radoszkowski] by printed label “Caucasus”.

Skorikovia radoszkovskii (Skorikov, 1935)

Fig. 5

Ephutomma radoszkovskii Skorikov, 1935: 325, ♂, lectotype (**designated here**), ♂, “Caucasus [probably collected in Georgia] / Z / Type / 5-fasciata [handwritten] / Coll. Radosz[owski] / Zool. Muz. Berlin / Paralectotype *Mutilla elongata* Radoszkowski 1885, B. Petersen des. 1988 / *Smicromyrme radoszkovskii* (Skorikov), B. Petersen det. 1988 / Lectotypus *Ephutomma radoszkovskii* Skorikov Lelej design. 2011 / *Skorikovia radoszkovskii* (Skor.) Lelej det. 2011” [MNHU], examined.

Skorikovia radoszkovskii: Lelej 2002: 64 (Azerbaijan)

Material examined. Azerbaijan, Adzhikend, 12.VII.1909, Babadzhanidi, 1♂ [ZIN].

Distribution. Azerbaijan, Georgia, Russia (European part), Turkey.

Skorikovia transcaucasica (Lelej, 1985)

Smicromyrme (Nemka) transcausicus Lelej, 1985: 245, ♂, holotype, ♂, Environs of Erevan [Armenia], Berdadzor River, 28.VII.1969, V. Richter [ZIN], examined.

Smicromyrme transcausicus: Aliev & Lelej 1999: 47, ♂ (Azerbaijan).

Skorikovia transcaucasica: Lelej 2002: 64 (Azerbaijan).

Material examined. Paratypes of *Smicromyrme (Nemka) transcausicus*: 1♂, Azerbaijan, Tash-Bulag [Azerbaijan in Lenkoran region], 23.VI.1928, O. Bocharnikov [ZIN]; 1♂, Azerbaijan: Nakhchivan: Ordubad, 1892, Reitter [ZIN].

Distribution. Azerbaijan, Armenia, Turkey.

12. Genus *Smicromyrme* Thomson, 1870

Type species: *Mutilla rufipes* Fabricius, 1787, ♀, by monotypy.

This genus is widely spread in the Old World (110 species in the Palaearctic, 90 in the Afrotropical, and 68 in the Oriental regions (Lelej 2007; Pagliano *et al.* 2020), ten species of this genus are distributed in Azerbaijan. Five of them are recorded from this country for the first time.

Smicromyrme (Astomyrme) ausonius Invrea, 1950

Material examined. Azerbaijan: NW Baku, Varafta Mts., W Kilyazi, 250 m, 40°50'N, 49°10'E, 25.VI.1996, M. Hauser, 1♂; [IBSS]; Apshron, Zagulba, 16–26.V.1970, O. Kryzhanovsky, 1♀; Apshron, under stones, 28.VIII.1994, E. Guseinov, 1♀; Shakhbuz, Ayrintj, 39°25'N, 45°35'E, 1240 m, 25.VII.2018, MP, HA, MM, 1♂.

Distribution. Azerbaijan (new record), Cyprus, France (Corsica), Greece, Italy, Kazakhstan, Moldova, Russia (Crimea, North Caucasus, south of European part, South Urals), Turkey, Turkmenistan (Kopet-Dag), Ukraine.

Smicromyrme (Eremotilla) nigriceps Nonveiller, 1959

Smicromyrme (Eremotilla) maculatus: Aliev & Lelej 1999: 47, ♀ (Azerbaijan).

Material examined. Azerbaijan: Agdash, Turianchay, 2, 3.X.1994, HA, 2♀.

Distribution. Azerbaijan, Armenia, Georgia, Greece, Iran (north), North Macedonia, Russia (Crimea, North Caucasus, south of European part), Serbia, Turkmenistan (south-west).

Smicromyrme (Eremotilla) novaki Invrea, 1954

Smicromyrme nonveilleri: Lelej 1985: 228, ♀ (Azerbaijan).

Material examined. Azerbaijan: Galaalti, 12.VII.2012, I. Kerimova, 1♀; Elizavetpol [Ganja], 14.IV.1909, 1♀ [ZIN].

Distribution. Azerbaijan (new record), Bulgaria, Croatia, Greece, Montenegro, Romania, Russia (Crimea, south of European part).

Smicromyrme (Eremotilla) schwarzi Suárez, 1975

Smicromyrme (Eremotilla) schwarzi: Aliev & Lelej 1999: 47, ♂ (Azerbaijan).

Material examined. Azerbaijan: Apshron, under stones, 25.VIII.1994, E. Guseinov, 1♂; Geoktapa [near Hanlar, Goygol], A. Shelkovnikov, 1♂ [ZIN]; Karadonlu, Arax River, 20.VI.1911, R. Schmidt, 1♂ [ZIN]; Talysh, 8 km W Gosmolyan, 1.VII.1979, M. Volkovich, 1♂ [ZIN]; Disar [Bashkend] near Ordubad, 19.VII.1933, D. Znoiko, 1♂ [ZIN].

Distribution. Azerbaijan, Armenia, Georgia, Greece, Russia (Crimea, North Caucasus), Turkey, Ukraine.

Smicromyrme (Erimyrme) azerbaijdzhanicus Lelej, 1985

Smicromyrme (Erimyrme) azerbaijdzhanicus Lelej, 1985: 238, ♂, holotype, Azerbaijan, Talysh River, 12 km S Lenkoran [Lankaran], on light, 5.VII.1932, P. Veltishchev [ZIN], examined; Aliev & Lelej 1999: 47, ♂ (Azerbaijan).

Material examined. Paratypes of *S. azerbaijdzhanicus*: Azerbaijan, Alekseevka, 12 km SW Lankaran, on light, 25.VIII.1932, D. Znoiko, 1♂ [ZIN]; Geoktapa [near Hanlar, Goygol], on light, 6.VII.1901, R. Schmidt, 1♂ [ZIN]; Karabakh, Martuni [Khojavend], 19.IX.1927, Kostandyan, 1♂ [ZIN].

Distribution. Azerbaijan, Turkey, Turkmenistan (south-west).

Smicromyrme (Smicromyrme) ruficollis ruficollis (Fabricius, 1793)

Smicromyrme ruficollis ruficollis: Petersen 1988: 213.

Material examined. Azerbaijan: Babek, Gahab, 39°15'N, 45°31'E, 1045 m, 12.VI.2019, MP, HA, MM, 1♂.

Distribution. Azerbaijan (new record), Turkey (Asian territory), Kazakhstan, Russia (Crimea, south of European part, Altai), Greece, Bulgaria, Croatia, Serbia, Austria, Ukraine, Italy, Malta, France, Spain.

Smicromyrme (Smicromyrme) rufipes (Fabricius, 1787)

Smicromyrme rufipes: Thomson 1870: 209, ♀, ♂.

Material examined. Azerbaijan: Kangarli, Chalkhangala, 39°25'N, 45°13'E, 1445 m, 25.VI.2020, MM, 1♂.

Distribution. Azerbaijan (new record), Turkey (Erzurum), Kazakhstan, Slovenia, Croatia, Bosnia-Herzegovina, Serbia, Montenegro, Macedonia, Sweden, Finland, Germany, Austria, Switzerland, Hungary, Czech Republic, Slovakia, Ukraine, Belarus, Russia (European part, South Urals, Altai, Yakutia), Spain (north), Italy (north, ?Sicily), France.

Smicromyrme (Smicromyrme) tristis Lelej, 1984

Material examined. Azerbaijan: Sharur, Akhura, 39°33'N, 45°13'E, 1640 m, 13.VI.2019, MP, HA, MM, 1♂.

Distribution. Azerbaijan (new record), Austria, Bulgaria, Czechia, Kazakhstan, Russia (Crimea, Urals), Slovakia.

Smicromyrme (Smicromyrme) viktorovi Lelej, 1984

Smicromyrme (Smicromyrme) viktorovi: Lelej 1985: 234, ♂ (Azerbaijan).

Material examined. Azerbaijan, Shamkir, 24.V.2012, Sh. Magerramova, 1♂; Agdash, Turianchay, 8.V.1992, HA, 1♂; Masally, Istisu, 25.VI.2006, HA, 2♂; Kangarli, Chalkhangala, 39°25'N, 45°13'E, 1445 m, 25.VI.2020, MM, 3♂.

Distribution. Azerbaijan, Georgia, Russia (south of European part).

Smicromyrme atrithorax (André, 1902), stat. resurr., stat. nov.

Fig. 6

Mutilla arameana var. *atrithorax* André, 1902: 336, ♂, holotype, "Transkauk[asus], Helenendorf [Azerbaijan: Hanlar, Goygol], 1886 / *araméana* A[ndré] *atrithorax* Typ det. E. André / HOLOTYPE teste B. Petersen 1986 / *Smicromyrme turanica* (Moraw.) B. Petersen det. 1986" [NHMW], examined. Junior subjective synonym of *Smicromyrme (Nemka) turanicus* (Morawitz, 1893) according to Lelej 1985: 245.

Smicromyrme (s.str.) *turanicus atrithorax*: Lelej & Kabakov 1980: 194, ♂, ♀.

Smicromyrme kurdus Skorikov, 1935: 315, ♀, lectotype (designated by Lelej & Kabakov 1980: 194), Armenia, near Erevan, 18.V.1924, A. Shelkovnikov [ZIN], examined; Aliev & Lelej 1999: 47, ♀. **Syn. nov.** Junior subjective synonym of *Smicromyrme turanica atrithorax* (André, 1902) according to Lelej & Kabakov 1980: 194.

Smicromyrme kurdus subtunensis Skorikov, 1935: 315, ♀, lectotype (designated by Lelej & Kabakov 1980: 194), "Eldar na gore Signakh [Signaghi] u Tiflisa [Georgia, Tbilisi], VII.1895, Mlokošewitz" [ZIN], examined. Junior subjective synonym of *Smicromyrme turanicus atrithorax* (André, 1902) according to Lelej & Kabakov 1980: 194.

Material examined. Azerbaijan: Agdash, Turianchay, 24.IV.1992, 7.V.1992, HA, 4♀; same place, 3.X.1994, HA, 1♂; Apshron, Inzhirnyaya, 27.VI.1996, HA, 1♀; Apshron, Zagulba, 16–26.V.1970, O. Kryzhanovskiy, 2♀; Babek, Sirab, 39°18'N, 45°31'E, 1090 m, 27.V.2020, MM, 1♂; Babek, Yukhari, 39°31'N, 45°22'E, 1720 m, 11.VI.2019,

MP, HA, MM, 1♀; Julfa, Gazanchi, 39°13'N, 45°41'E, 1300 m, 15.VI.2019, MP, HA, MM, 1♀; Ordubad, 29–30.V.1974, M. Volkovich, 2♀.

Distribution. Azerbaijan, Afghanistan, Armenia, Georgia, Iran.

Note. The male of *S. atrithorax* and the female of *S. kurdus* were collected in the same area in Azerbaijan. Furthermore, in Azerbaijan the *turanicus* species-group is represented by one species known from males and one species known from females; we here treat them as opposite sexes of the same species.

Tribe Mutillini

13. Genus *Macromyrme* Lelej, 1984

Type species: *Mutilla binotata* Radoszkowski, 1879, ♀, by original designation.

Three species of *Macromyrme* occur in the Palaearctic and eleven species occur in the Afrotropical region (Lelej 2007; El-Torkey *et al.* 2011; Lo Cascio *et al.* 2012). The male is still unknown for this genus. One species occurs in Azerbaijan. Because of a new synonymy, we include in the list *M. villosa* (Klug), which is absent in Azerbaijan, and prepared a key to all Palaearctic species of this genus.

Key to the Palaearctic species of *Macromyrme* (females)

1. T1 without posteromedian spot of pale setae. T2 with two subbasal spots of pale setae separated by distance at most equal to their own diameter. Dorsal propodeal face posterad with small median tubercle.—Egypt (South Sinai) *M. leleji* Soliman in El-Torkey *et al.*
- T1 with posteromedian quadrangular spot of pale setae that extends onto T2. T2 with two subbasal spots of pale setae separated by distance more than their own diameter. Dorsal propodeal face posterad with well developed median tubercle 2
2. Antennal tubercle with denticle. Mesopleuron with precoxal carina. Clypeus basally with two well-developed larger lateral and one smaller medial tubercles. Propleuron anterad with complete vertical carina. Pygidial area basally granulated with rare longitudinal rugae. *M. sinuata* (Olivier) (= *Mutilla araratica* Rad., = *Mutilla binotata* Rad.)
- Antennal tubercle without denticle. Mesopleuron without precoxal carina. Clypeus basally without developed tubercles. Propleuron anterad with vertical carina in upper half. Pygidial area basally finely rugulated without longitudinal rugae. *M. villosa* (Klug) (= *Mutilla sinuata* auct.)

Macromyrme sinuata (Olivier, 1811)

Figs 7, 8

Mutilla sinuata Olivier, 1811: 58, ♀ [type locality: “en Perse, aux environs de Kermanshah” (West Iran) [syntypes in Mus. Nat. d’Hist. Natur. Paris]; André 1901: 304, part.; 1902b: 34, part; 1910: 75, part.

Mutilla binotata Radoszkowski, 1879: 150, ♀ [“Caucasus”, “Envoyé par M. Mlokoševitz”, lectotype (**designated here**), ♀, “Cuacanus / Mlok[osevitz] / golden rounded label / *binotata* / *binotata* Type Rad / *sinuata* Ol. det. Bischoff / coll. Radosz. / Zool. Muz. Berlin / Lectotype *Mutilla binotata* Radoszkowski, 1879 B. Petersen des. 1988 / *Mutilla binotata* Rad. B. Petersen det. 1988” [MNHU], examined], **syn. nov.**

Mutilla araratica Radoszkowski, 1890: 507, ♀ “Ararat, entre Sardar-Abadu et Sarabandy (13,000’ 3900 m)” [currently Turkey, Provinces Iğdir and Ağrı], 20–21.08.1889, Mlokošewicz [given in the introduction], lectotype (**designated here**), ♀, “Ararat / golden rounded label / n. sp. *araratica* [Radoszkowski handwriting] / Type / *sinuata* Ol. var. *araratica* R. / Coll. Radosz. / Zool. Muz. Berlin / Lectotype *Mutilla binotata* Radoszkowski, 1879 B. Petersen des. 1988 / *Mutilla araratica* Radoszkowski, 1890 / *Mutilla binotata* Rad. B. Petersen det. 1988” [MNHU], examined], **syn. nov.** Junior subjective synonym of *Mutilla binotata* Radoszkowski, 1879 according to Lelej 1984c: 828.

Ronisia sinuata: Bischoff 1920: 190; Invrea 1965: 75, ♀.

Macromyrme sinuata: Lelej 2002: 41, part.

Material examined. Azerbaijan: Nakhchivan: Ordubad, 1892, E. Reitter, 1♀ [ZIN]; Parađaçay near Ordubad, 27.VI, 28.VII.1933, D.V. Znoiko, 2 ♀ [ZIN]; Ordubad, Agdara, 11.VI.2017, I. Kerimova, 1♀ [IBSS]. Iran: Kordestan, Bijar, 9.VII.1968, Dezfulian, 1♀; Ardebil, Moghan, 8.V.1967, Arghand, 1♀; East Azarbaijan, Mianeh, mount Bozghush, 2250 m, 31.VII.1992, Badii & Parchami, 1♀ [IRIPP].

Distribution. Azerbaijan, Armenia, Georgia, Northwestern Iran, Turkey.

Note. Børge Petersen (unpublished) labelled the specimens of *Mutilla binotata* Radoszkowski, 1879 and *M. araratica* Radoszkowski, 1890 in MNHU with Radoszkowski's "Type" labels as the lectotypes. Since no validly published lectotypes designation has yet been made, we hereby designate the specimens so labelled by Petersen as the lectotype.

Macromyrme villosa (Klug, 1829), stat. resurr., comb. nov.

Fig. 9

Mutilla villosa Klug, 1829: Dec. 1: [4], N 12, tab. 4, fig. 12, ♀ "Ex Syria" [Lebanon, between Tripoli, Beirut and Baalbeck, May 18–Aug. 6 1824 (Baker 1997)], lectotype (**designated here**), ♀, "Syrien, Ehrenberg S. / *sinuata* Oliv. n°-18. videtur [probably handwritten by O. Radoszkowski, who saw the type of *villosa*] / 6512 / Type *villosa* Kl / *sinuata* Ol. det. Bischoff / Zool. Muz. Berlin / Lectotype *Mutilla villosa* Klug, 1829 B. Petersen des. 1988 / *Mutilla sinuata* Oliv. B. Petersen det. 1988" [MNHU], examined]. Junior subjective synonym of *Mutilla sinuata* Olivier, 1811 according to Sichel & Radoszkowski 1870: 237.

Mutilla sinuata: auctorum.

Material examined. Palestine, Jerusalemm, 1.IV.1914, Pastukhov, 1 ♀ [ZIN]. Israel: Mitzpe Ramon, 17–19.IV.1994, M. Volkovich, 1 ♀ [IBSS].

Distribution. Cyprus, Egypt, Israel, Jordan, Lebanon, Syria, Palestine, Morocco.

Note. Børge Petersen (unpublished) labelled the specimen in MNHU with Klug's "Type" label as the lectotype. Since no validly published lectotype designation has yet been made, we hereby designate the specimen so labelled by Petersen as the lectotype.

14. Genus *Mutilla* Linnaeus, 1758

Type species: *Mutilla europaea* Linnaeus, 1758, ♀, by subsequent designation of Latreille 1810: 437.

Hundreds of species in the Old World have been described in the genus *Mutilla* (André 1902b), but they belong to different genera, and even to different tribes and subfamilies. *Mutilla* species were recently catalogued in the Palearctic (ten species—Lelej 2002), and in the Oriental region (four species—Lelej 2005), but have not been recently examined in the Afrotropical region (142 species—Bischoff 1920). Two species of this genus are distributed in Azerbaijan.

Mutilla erschoffii Sichel & Radoszkowski, 1870

Mutilla erschoffii: Lelej 1985: 163, ♀, ♂ (Azerbaijan); Aliev & Lelej 1999: 45, ♀ (Azerbaijan).

Material examined. Azerbaijan: Agdash, Turianchay, 9.V.1992, HA, 1 ♀; Julfa, Milakh, 38°15'N, 45°43'E, 1430 m, 27.VII.2018, MP, HA, MM, 1 ♂; Babek, Shikhmahmud, 39°15'N, 45°25'E, 940 m, 30.VII.2018, MP, HA, MM, 1 ♀; 10 km NE Julfa, 17.VI.1985, A. Sharkov, 1 ♀; Julfa, Daridagh, 38°59'N, 45°40'E, 900 m, 17.VI.2019, MP, HA, MM, 1 ♂; Babek, Sirab, 39°18'N, 45°32'E, 1250 m, 18.VI.2019, MP, HA, MM, 1 ♂.

Distribution. Azerbaijan, Afghanistan, Armenia, Georgia, Iran, Tajikistan, Turkmenistan, Uzbekistan.

Mutilla saltensis Radoszkowski, 1885

Mutilla saltensis: Lelej 1985: 161, ♀, ♂ (Azerbaijan); Aliev & Lelej 1999: 45, ♀, ♂ (Azerbaijan).

Material examined. Azerbaijan: Shakhbuz, 39°23'N, 45°32'E, 19.VI.1987, HA, 2 ♀; Shakhbuz, Kecheli, 22.VII.2021, MM, 1 ♂.

Distribution. Azerbaijan, Armenia, Georgia, Iran, Iraq, Russia (North Caucasus).

15. Genus *Ronisia* Costa, 1858

Type species: *Ronisia torosa* Costa, 1858, ♂, by monotypy (junior synonym of *Mutilla brutia* Petagna, 1787, ♀).

Forty-four species and 19 subspecies are recognized in *Ronisia*, most taxa of this genus occur in the Afrotropical Region, but eight species occur in the Palearctic Region (Pagliano *et al.* 2020). One species of this genus occurs in Azerbaijan.

Ronisia brutia duplex (Radoszkowski, 1885)

Fig. 10

Ronisia brutia: Lelej 1985: 166, ♀, ♂ (Transcaucasus); Aliev & Lelej 1999: 45, ♀, ♂ (Azerbaijan).

Ronisia brutia duplex: Lelej 2002: 46 (Azerbaijan).

Mutilla duplex Radoszkowski, 1885: 12, fig. 5, ♂, lectotype (designated by Petersen 1988: 149), “Persia / PERS[ia], MLOK[osiewicz], [North Iran] / *duplex* / *Humeralis* / Type / Coll. Radosz. / Zool. Mus. Berlin / Lectotype *Mutilla duplex* Radoszkowski, 1885, B. Petersen des. 1988 / *Mutilla brutia* Petagna ssp. *duplex* Rad., B. Petersen det. 1988” [MNHU], examined.

Mutilla brutia duplex: Petersen 1988: 207, ♀, ♂.

Ronisia brutia: Aliev & Lelej 1999: 45, ♀, ♂ (Azerbaijan).

Ronisia brutia duplex: Pagliano *et al.* 2020: 233.



FIGURES 2–10. Labels of the type specimens. 2. *Agama caucasica* Radoszkowski, 1885, ♂, lectotype [MNHU]; 3. *Mutilla armeniaca* Kolenati, 1846, ♀, lectotype [NHMW]; 4. *M. elongata* Radoszkowski, 1885, ♂, lectotype [MNHU]; 5. *Ephutomma radoszkovskii* Skorikov, 1935, ♂, lectotype [MNHU]; 6. *M. arameana* var. *atrithorax* André, 1902, ♂, holotype [NHMW]; 7. *M. araratica* Radoszkowski, 1890, ♀, lectotype [MNHU]; 8. *M. binotata* Radoszkowski, 1879, ♀, lectotype [MNHU]; 9. *M. villosa* Klug, 1829, ♀, lectotype [MNHU]; 10. *M. duplex* Radoszkowski, 1885, ♂, lectotype [MNHU]. Photos by A. Lelej.

Material examined. Azerbaijan: Talysh, 15.VII.1970, A. Osychnyuk, 1♀ 1♂ [IBSS]; Agdash, Turianchay, 3, 4.X.1994, HA, 2♀; Galaalti, 12.IX.2012, I. Kerimova, 1♀; Talysh, 28 km SW Massaly, 11.VI.1985, M. Volkov-

ich, 1♀; Julfa, Milakh, 38°15'N, 45°43'E, 1430 m, 27.VII.2018, MP, HA, MM, 2♂; Ordubad, Aghdara, 39°06'N, 45°54'E, 2000 m, 28.VII.2018, MP, HA, MM, 1♂. Armenia, Khosrov reserve, Vedi, 23, 24.VI.1980, V. Ermolenko, P. Puchkov, 2♀; same place, 15.VI.1982, V. Ermolenko, 1♀.

Distribution. Azerbaijan, Armenia, Georgia, Iran.

Note. *Ronisia brutia duplex* differs from the nominotypical subspecies by having in the males of *R. b. duplex* only the mesoscutum, axillae, mesoscutellum, metanotum and tegulae are dark red; in females, the red integumental spot of the vertex is reduced to a transverse bar between the upper part of the eyes (Petersen 1988).

16. Genus *Tropidotilla* Bischoff, 1920

Type species: *Mutilla litoralis* Petagna, 1787, ♀, by original designation (misspelled as *littoralis*).

Eight species of *Tropidotilla* occur in the Palaearctic Region and six occur in the Afrotropical Region (Pagliano *et al.* 2020). Three species of this genus are distributed in Azerbaijan.

Tropidotilla litoralis (Petagna, 1787)

Tropidotilla litoralis: Lelej 1985: 170, ♀, ♂ (Azerbaijan); Aliev & Lelej 1999: 45, ♀, ♂ (Azerbaijan).

Material examined. Azerbaijan: Agdash, Turianchay, 7.V.1992, HA, 1♀; same place, 3.X.1994, HA, 1♀; Galaalti, 12.VII.2012, I. Kerimova, 1♀; Kiljazi, 26.V.1987, V. Tsimberov, 1♀; Talysh, Gosmolyan, 2000 m, 9.VI.1985, A. Sharkov, 1♀; NW Baku, Varafta Mts., W Kilyazi, 250 m, 40°50'N, 49°10'E, 25.VI.1996, M. Hauser, 1♀; [IBSS]; Lerik, Zuvand, Gosmolyan, 1300 m, 10–12.VI.1996, W. Shawaller, 1♀; Shakhbuz, Mahmudoba, 20.V.1988, Davidyan, 4♀; Chalkhangala, 2.V.2012, HA, 1♀; Shakhbuz, 39°23'N, 45°32'E, 3.V.2012, HA, 1♀; Babek, Sirab, 39°18'N, 45°32'E, 1245 m, 1.VI.2016, 7, 13.VI.2018, MM, 10♂; Shakhbuz, 39°22'N, 45°35'E, 1313 m, 27.VI–14.VII.2016, MM, 3♂, 1♀; Shakhbuz, Kechili, 39°22'N, 45°43'E, 1800 m, 22.VII.2018, MP, HA, MM, 1♂; Julfa, Milakh, 38°15'N, 45°43'E, 1430 m, 27.VII.2018, MP, HA, MM, 1♂; Shakhbuz, Zarnatun, 39°31'N, 45°46'E, 1550 m, 18.VI.2019, MP, HA, MM, 5♂; Shakhbuz, Gizil Gishlag, 39°28'N, 45°35'E, 1460 m, 19.VI.2019, MP, HA, MM, 1♂; Babek, Gahab, 39°15'N, 45°31'E, 1045 m, 12.VI.2019, MP, HA, MM, 2♂; Babek, Sirab, 39°18'N, 45°32'E, 1250 m, 21.VI.2019, MP, HA, MM, 1♂; Julfa, Daridagh, 38°59'N, 45°40'E, 900 m, 20.VI.2019, MP, HA, MM, 2♂; Sharur, Akhura, 39°33'N, 45°13'E, 1640 m, 13.VI.2019, MP, HA, MM, 2♂; Ordubad, Aghdara, 39°06'N, 45°54'E, 2000 m, 17.VI.2019, MP, HA, MM, 1♀; Kangarli, Chalkhangala, 39°25'N, 45°13'E, 1445 m, 25.VI.2020, MM, 10♂.

Distribution. Azerbaijan, Albania, Algeria, Armenia, Austria, Belgium, Bulgaria, Croatia, Egypt, France, Georgia, Hungary, Jordan, Greece, Iran, Israel, Italy, Lebanon, North Macedonia, Montenegro, Morocco, Portugal, Romania, Russia (Crimea, North Caucasus, south of European part), Spain, Switzerland, Turkey, Turkmenistan, Ukraine.

Tropidotilla sareptana (André, 1901)

Tropidotilla sareptana: Lelej 1985: 171, ♀, ♂ (Azerbaijan).

Material examined. Azerbaijan: Julfa, 5 km N Dize, 39°03'N, 45°45'E, 965 m, 20.VI.2019, MP, HA, MM, 1♂; Julfa, Milakh, 38°15'N, 45°43'E, 1430 m, 27.VII.2018, MP, HA, MM, 1♂; Julfa, Goydara, 39°09'N, 45°40'E, 1150 m, 26.VII.2018, MP, HA, MM, 1♀; Babek, Sirab, 39°18'N, 45°31'E, 1090 m, 10.VI.2019, MP, HA, MM, 1♂.

Distribution. Azerbaijan, Armenia, Greece, Russia (south of European part, North Caucasus), Turkey.

***Tropidotilla semirufa* (André, 1893)**

Tropidotilla semirufa: Lelej 1985: 171, ♀, ♂ (Azerbaijan).

Material examined. Azerbaijan, Karabakh, Martuni [Khojavend], 19.IX.1927, Kostandyan, 7♂; Azerbaijan: Nakhchivan: Disar [Bashkand] near Ordubad, 20.VII.1933, D. Znoiko, 1♂; Julfa, 21.VI.1929, E. Shestoporov, 1♀.

Distribution. Azerbaijan, Armenia, Iran, Jordan, Turkey.

Tribe Trogaspidiini

17. Genus *Artiotilla* Invrea, 1950

Type species: *Mutilla biguttata* Costa, 1858, ♀, by original designation.

This Palearctic genus has three included species (Lelej 2020); one of these occurs in Azerbaijan.

***Artiotilla biguttata* (Costa, 1859)**

Artiotilla biguttata: Lelej 1985: 178, ♀, ♂ (Azerbaijan).

Material examined. Azerbaijan: Agdash, Turianchay, 7.V.1992, HA, 1♀; Bakinskaya guberniya, K. Satunin, 1♂ [ZIN]; Karabakh, Martuni [Khojavend], 19.IX.1927, Kostandyan, 1♂; Mugan steppe, Alpaut, 14, 15.VII.1910, K. Satunin, 2♂ [ZIN]; Mugan steppe, Semenovka, 22.V.1913, Shreiner, 1♀ [ZIN]; Alazapin near river Vasharuchai, 8.VII.1932, D. Znoiko, 1♀ [ZIN]; Lenkoran, Alekseevka, 16.VIII.1930, A. Shestakov, 1♀ [ZIN]; Talysh, Bilyasar, 10.VII.1910, K. Satunin, 1♂ [ZIN].

Distribution. Azerbaijan, Afghanistan, Albania, Bosnia and Herzegovina, Croatia, Cyprus, France (Corsica), Greece, Iran, Israel, Italy, North Macedonia, Montenegro, Russia (North Caucasus), Serbia, Turkey, Turkmenistan.

18. Genus *Neotrogaspidia* Lelej, 1996

Type species: *Mutilla pustulata* Smith, 1873, by original designation.

This genus includes four species in the Palearctic and Oriental Regions, one of them is distributed in Azerbaijan.

***Neotrogaspidia hammeri* (Suárez, 1959)**

Trogaspidia hammeri: Lelej 1985: 177, ♂, ♀ (Azerbaijan).

Neotrogaspidia hammeri: Lelej 2002: 82 (Azerbaijan).

Material examined. Azerbaijan: Gobustan, Beyuk-Dash Mt., 26.VII.2009, HA, 1♀; Agdash, Turianchay, 9.V.1992, HA, 2♀; Shakhbuz, Salasuz, 39°20'N, 45°45'E, 1125 m, 23.VII.2018, MP, HA, MM, 1♂; Julfa, Gazanchi, 39°13'N, 45°41'E, 1300 m, 15.VI.2019, MP, HA, MM, 1♂, 1♀.

Distribution. Azerbaijan, Armenia, Cyprus, Iran, Russia (North Caucasus), Palestine, Turkey, Turkmenistan.

19. Genus *Trogaspidia* Ashmead, 1899

Type species: *Mutilla medon* Smith, 1855, ♂, by original designation.

Over 350 species are currently placed in *Trogaspidia*, including over 200 Afrotropical species in various subgenera (Bischoff 1920; Nonveiller 1995) and 140 Oriental species (Lelej 2005). Seventeen species are distributed in the Palaearctic, two of them are in Azerbaijan.

Trogaspidia fedtschenkoi (Radoszkowski, 1877)

Trogaspidia fedtschenkoi: Lelej 1985: 177, ♂, ♀ (Azerbaijan); Aliev & Lelej 1999: 46, ♀, ♂ (Azerbaijan).

Material examined. Azerbaijan: Yevlakh, salt marshes with *Salsola* and *Tamarix*, 15.VII.1950, A. Bogachev, 1♂, 1♀.

Distribution. Azerbaijan, Iran, Kazakhstan (south), Kyrgyzstan, Tajikistan, Turkmenistan

Trogaspidia catanensis (Rossi, 1794)

Trogaspidia catanensis: Lelej 1985: 176, ♀, ♂; Aliev & Lelej 1999: 46, ♀, ♂ (Azerbaijan).

Material examined. Azerbaijan: Agdash, Turianchay, 4.X.1994, HA, 2♂; same place, 5.X.1998, HA, 1♂; same place, 6.V.1992, HA, 1♀.

Distribution. Azerbaijan, Algeria, Armenia, Croatia, Egypt, Hungary, Italy, Kazakhstan (west), North Macedonia, Romania, Russia (Crimea, North Caucasus, south of European part), Serbia, Turkey, Ukraine.

The species excluded from Azerbaijan fauna

Dasylabris (Baltilla) gobicola Skorikov, 1935. The female of this species recorded from Azerbaijan (Aliev & Lelej 1999) belongs to *D. (I.) erronea* Lelej, 1985.

Dasylabris (Inbaltilla) paupertina Skorikov, 1935. The males of this species from Azerbaijan and Armenia (Lelej 1985) belong to *D. (I.) erronea* Lelej, 1985.

Smicromyrme (Eremotilla) nonveilleri Invrea, 1954. This species was synonymized under *S. (E.) novaki* Invrea, 1954 (Lelej 2017).

Smicromyrme turanicus (Morawitz, 1893). The males of this species from Azerbaijan belong to a separate species, *S. atrithorax* (André, 1902) (= *S. kurdus* Skorikov, 1935).

Biogeography

The mutillid fauna of Azerbaijan is known rather well and currently includes 58 species in 19 genera; *Dentilla caucasica* Lelej, 1985 is an endemic species. At least 40 species are known from both sexes, nine from females only and nine from males only. A cluster analysis of faunal similarities among Azerbaijan, Armenia, Georgia, Turkey and Russia (Crimea, North Caucasus, south of European part) for Mutillidae produced two major clusters (index similarity 0.4; see Fig. 11): Azerbaijan, Armenia, Turkey and Georgia (bootstrap probability 45 %), and the three regions of Russia (bootstrap probability 87 %). The UPGMA cluster analysis demonstrates an important boundary between two large biogeographical regions: Mediterranean and Euro-Siberian subregions of the Palaearctic (the division of Palaearctic follows Semenov-Tian-Shanskij 1935). The Azerbaijan fauna, especially Nakhchivan Autonomous Republic, which includes some Anatolian-Armenian species, is most related with Armenian fauna. Iranian fauna of Mutillidae belongs to the Irano-Turanian subregion (Sethian desert Region by A. Emeljanov) of Palaearctic and quite differs from two major clusters above (index similarity 0.25) and omitted in the Fig. 11.

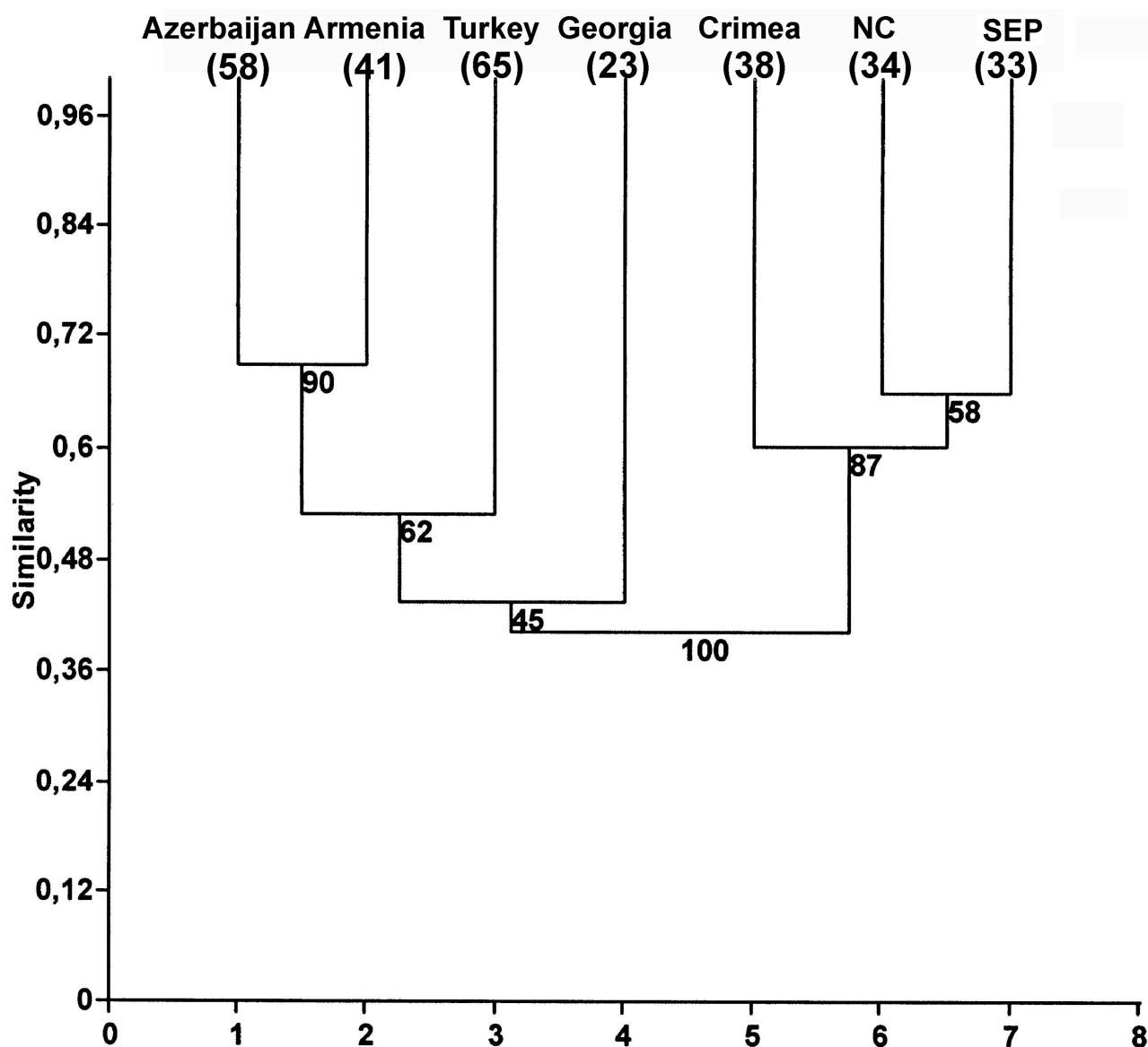


FIGURE 11. Similarity of 102 species of velvet ant species from Azerbaijan, Armenia, Georgia, Turkey and Russia (Crimea, North Caucasus [NC] and south of European part [SEP]). Bootstrap probabilities (expressed in percentages) are indicated at node of each cluster. The number of species is given below the country (region) name.

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